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REPORT OF FRESH MARKET STAKED TOMATO STUDY

Columbus, Ohio 1977

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By
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Introduction

This report is a continuation of a series of studies conducted at The Ohio State University Horticultural Research and Demonstration Area to evaluate currently used and newly developed tomato cultivars and hybrids.

It is the intention that this report would be helpful to both commercial and amateur growers in selecting and growing high quality tomatoes.

Trial Size

The trial consisted of 10 cultivars in 4 replications and 30 entries in non-replicated observation plots.

Row and Plant Spacing

Rows were spaced 48 inches apart with a plant spacing of 18 inches. Fifteen plants, equivalent to 7,260 plants per acre, were planted per single row plot.

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Plant Training

All replicated and guard plants were trained to 6 ft. wooden stakes. Plants were pruned to a double stem by allowing the "sucker" below the first cluster to develop. All other "suckers" were removed to the sixth flower cluster.

Cultural Practices

Seed was sown on April 8, 1977. Seedlings were transplanted into 2¼ inch cell paks on April 20, and field set on May 25, 1977.

One thousand pounds of 15-15-15 were drilled and plowed down on April 1, 1977. A 10-52-8 starter solution at a concentration of 3 pounds per 50 gal. was applied at rate of ½ pt. per plant at planting time.

Enide, applied on May 26 and Amiben, applied on June 20, were used for weed control in the plots.

Thirty pounds of 33.5-0-0 fertilizer per acre were applies as a nitrogen side dressing on June 29, 1977.

Insect and disease control measures were used at recommended intervals.

Irrigation was applied at the rate of 1 inch per week as required.

Weather Data*

Month	Average Temperature (°F)	Total Rainfall (Inches)	Above or Below Normal (Inches)
May	66.8	.95	-3.15
June	67.5	4.02	-0.11
July	76.2	2.52	-1.69
August	72.0	4.76	1.90
September	68.2	3.48	1.07

*Official records of the U.S. Weather Bureau, Port Columbus International Airport

Code	Seed Sources
A-1	Agway, Inc, Vegetable Seed Farm, Prospect, PA 16052
A-2	Agricultural Experiment Station, Auburn University, Auburn, AL 36830
B-1	Geo. J. Ball, Inc., West Chicago, IL 60185
B-2	W. Atlee Burpee, Co., Philadelphia, PA 19132
G-1	Gurney Seed & Nursery Co., Yankton, S.D. 57078
H-1	Joseph Harris Co., Rochester, N.Y. 14624
L-1	Leathermans Seed Co., Canton, OH 44707
N-1	Northrup King & Co., P. O. Box 959, Minneapolis, MN 55440
O-1	Ohio Agricultural Research and Development Center, Wooster, OH 44691
P-1	Park Seed Wholesale, Inc., Greenwood, S.C. 29646
P-2	Peto Seed Company, Inc., Box 4206, Saticoy, CA 93003
S-1	Stokes Seeds, Inc. 737 Main St., Box 548, Buffalo, N.Y. 14240
T-1	Otis S. Twilley Seed Co., Salisbury, MD 21801

Results and Discussion

Table 1 indicates relative performance of 10 cultivars grown for fresh market use on stakes in Columbus during the 1977 growing season. A comparison of these results with those of previous years, Table 2, indicates that this trial likely did not reveal the full potential of the cultivars. Less than ideal growing conditions resulted in lower yields and fruit quality than previous results suggest are possible. In this regard, a duplication of the trial would be in order in 1978.

It is interesting to note that over the years, Jet Star continues to be a consistently good performer in the Columbus trials. Despite the fact that the cultivar produced a lower yield in 1977 than it has produced in the previous five years, it was still the top yielding cultivar in the trials. The cultivar also yielded the greatest amount of No. 1 fruit.

Although Early Girl, Super Fantastic VF, Supersonic B, Better Boy VFN, Traveler and Ramapo Hybrid produced comparable total yields, Traveler, Ramapo Hybrid and Supersonic B produced more No. 1 fruit.

Compared to its performance in 1972, Heinz 1439 responded poorly in this trial.

Table 3 indicates the relative performance of 30 cultivars in a non-replicated observation plot. Results suggest that some of the cultivars should be included in replicated plots for additional study.

Supersonic and Super Red included in replicated trials in previous years, Table 2, continues to perform well in the Columbus trials.

TABLE 1. Yield and Quality of 10 Staked Tomato Cultivars in Replicated Trial, Columbus, Ohio, 1977

Cultivar	Seed Source	Early Harvest to July 28 (Tons/A) No. 1	% No. 1	Total	Fruit Size (oz)	Percent Culls	Total Harvest to October 7 (Tons/A) No. 1	% No. 1	Total	Fruit Size (oz)	Percent Culls
Early Girl	B-1	2.15	83	2.58	3.2	14	8.50	40	20.99	2.7	14
Jet Star	H-1	1.79	95	1.88	5.6	10	13.27	51	26.20	4.6	8
Fantastic	P-2	1.48	64	2.32	4.6	11	5.71	30	18.77	4.3	13
Super Fantastic	B-1	1.43	69	2.06	4.3	7	5.43	25	21.88	4.2	11
Supersonic B	H-1	0.91	68	1.34	4.2	9	9.73	43	22.87	4.6	9
Better Boy VFN	B-1	0.59	73	0.81	5.6	22	5.58	24	22.79	4.8	8
Heinz 1439	N-1	0.44	100	0.44	3.4	12	6.81	64	10.58	3.5	14
Traveler	L-1	0.29	88	0.33	3.2	48	10.58	58	18.26	3.5	13
Ramapo	H-1	0.24	63	0.38	4.2	17	10.04	49	20.42	4.6	13
Big Girl	B-2	0.21	55	0.38	7.7	25	6.40	38	17.03	5.3	13
LSD		1.08		1.19	n.s.		2.53		5.17	0.9	

TABLE 2. Yield Comparison of Selected Tomato Cultivars
OSU Horticulture Farm, Columbus, 1972-1977

Cultivar	Total Yield Tons/A					
	72	73	74	75	76	77
Fantastic	29.09	29.53	27.6	--	--	18.8
Jet Star	29.83	30.46	34.3	37.5	28.0	26.2
Supersonic	36.34	28.91	28.0	38.9	27.5	--
Caravelle	23.93	--	--	--	--	--
Ball Better Boy	31.36	28.54	31.6	35.4	18.1	22.8
Burpee VF	27.12	26.25	--	--	--	--
Market King	25.31	--	--	--	--	--
Heinz 1439	22.03	--	--	--	--	10.6
Wonder Boy	22.48	--	--	--	--	--
Ramapo	25.24	28.98	--	--	--	20.4
Campbell 1327	--	17.62	--	--	--	--
Setmore	--	18.44	--	--	--	--
Supersonic B	--	34.71	32.0	40.3	--	22.9
Tropic	--	29.34	--	--	--	--
W2HF	--	--	33.5	34.8	--	--
Early Girl	--	--	32.4	--	--	21.0
88 HF	--	--	29.8	34.5	--	--
OCHF	--	--	32.1	36.5	--	--
Super Red	--	--	32.4	44.6	--	--
Hybrid 980	--	--	--	34.2	--	--
Super Fantastic	--	--	--	--	26.8	--
Super Fantastic VF	--	--	--	--	--	21.9
Traveler	--	--	--	--	--	20.4
Big Girl	--	--	--	--	20.0	17.0

TABLE 3. Yield and Quality of 30 Staked Tomato Cultivars in Observation Plots, Columbus, Ohio, 1977

Cultivar*	Seed Source	Early Harvest to July 28 (Tons/A) No. 1	No. 2&3	Total	Fruit Size (oz)	Percent Culls by wt.	Total Harvest to October 7 (Tons/A) No. 1	No. 2&3	Total	Fruit Size (oz)	Percent Culls by wt.
7T 20	B-2	3.39	0.15	3.54	4.32	6	9.51	3.32	12.83	4.08	11
7T 21	B-2	2.52	0.85	3.37	4.94	9	8.52	15.46	23.98	3.82	8
Ultra Boy VFN	S-1	1.50	0.51	2.01	4.58	12	5.57	13.60	19.17	4.53	8
XP 802	A-1	1.19	0.61	1.79	3.82	13	6.27	14.76	21.03	3.28	14
Supersonic	H-1	1.04	0.15	1.19	4.96	25	8.78	17.50	26.28	4.64	9
W2HF	H-1	0.99	0.27	1.26	3.97	9	6.82	9.85	16.67	3.97	13
Monte Carlo	P-2	0.87	0.36	1.23	5.10	19	4.72	11.11	15.83	4.26	12
OCHF	H-1	0.82	0.0	0.82	4.53	6	6.80	14.52	21.32	4.69	12
V.F. Gardner	A-1	0.75	0.19	0.94	3.12	22	2.88	11.96	14.83	2.88	32
88 HF	H-1	0.73	0.0	0.73	6.00	30	9.46	12.10	21.56	4.06	7
Hawaii Tomato	T-1	0.68	0.56	1.23	5.44	0	4.52	13.00	17.52	3.84	14
Ohio HYB 7	O-1	0.65	1.19	1.84	4.86	10	5.61	15.29	20.90	3.65	16
Cannon Ball	G-1	0.63	1.33	1.96	5.63	7	1.79	7.48	9.27	5.15	5
Ohio HYB 9	O-1	0.63	0.58	1.21	5.01	7	6.12	17.74	23.86	3.89	18
Auburn 76 FMN	A-2	0.58	0.17	0.75	3.54	20	4.94	8.11	13.04	3.25	20

*Ranked in decreasing order of early yield of U.S. No. 1 grade fruits.

Cultivar*	Seed Source	Early Harvest to July 28 (Tons/A) No. 1	No. 2&3	Total	Fruit Size (oz)	Percent Culls by wt.	Total Harvest to October 7 (Tons/A) No. 1	No. 2&3	Total	Fruit Size (oz)	Percent Culls by wt.
Ohio HYB 65	O-1	0.48	0.14	0.63	3.78	7	6.39	11.83	18.22	4.62	21
Ohio HYB 68	O-1	0.48	0.32	0.80	4.06	3	3.61	13.26	16.87	4.10	23
7T 22	B-2	0.46	1.21	1.67	3.94	7	4.74	12.22	16.96	3.97	12
Ohio HYB 51	O-1	0.44	0.56	0.99	4.37	0	5.76	12.75	18.51	3.84	21
Super Red	A-1	0.44	0.73	1.16	5.12	9	9.05	16.65	25.70	4.69	10
Early Big Hybrid	T-1	0.41	0.58	0.99	5.44	7	2.06	13.91	15.97	4.96	7
Golden Jubilee	P-1	0.39	0.14	0.53	5.02	27	4.04	8.03	12.07	4.37	9
Hybrid 980	A-1	0.34	1.02	1.36	4.48	0	2.15	8.23	10.38	4.11	13
7T 23	B-2	0.24	0.46	0.70	3.87	17	4.11	14.64	18.75	4.38	12
Ultra Girl VFN	S-1	0.17	0.82	0.99	4.37	20	4.16	11.20	15.37	3.50	12
MR-13	O-1	0.15	0.89	1.04	4.30	4	1.77	8.59	10.36	3.10	29
OC6F	H-1	0.14	0.94	1.09	5.14	0	2.54	13.33	15.87	4.11	14
Golden Jubilee	H-1	0.10	0.07	0.17	5.60	50	5.83	7.16	12.99	4.34	7
2233	O-1	0.0	0.05	0.05	3.20	0	4.52	8.13	12.65	3.07	6
2234	O-1	0.0	0.0	0.0	0.0	0	4.43	11.76	16.19	3.73	9

*Ranked in decreasing order of early yield of U.S. No. 1 grade fruits.

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